

Application No. 09/384,900

REMARKS

In the Office Action of September 8, 2003, claims 24-26 have been rejected under 35 U.S.C. §102(b) as being anticipated by newly cited US Patent 5,728,066 to Daneshvar ("Daneshvar patent") and claims 24, 25, 29, 32-34, 37, and 40-42 have been rejected as being anticipated by newly cited US Patent 5,718,680 to Kraus et al. The remaining claims stand rejected under 35 U.S.C. §103(a) as obvious over the Daneshvar patent in combination with previously cited references US Patent 5,843,116 to Crocker et al. ("Crocker et al. patent") or US Patent 5,766,201 to Ravenscroft et al. ("Ravenscroft et al. patent"). As is explained below, the Daneshvar and Kraus et al. patents in no way teach the claimed elements of the present invention, either alone or in combination with the other references of record. Reconsideration and allowance of the present application are respectfully requested.

As was previously explained, the present invention as claimed differs from the prior art because the balloon sleeve of the present invention is rendered non-distensible prior to being formed into a balloon by mounting on the catheter shaft. Claim 24 as currently amended defines the present invention as follows:

A sleeve adapted to be mounted on a catheter shaft so as to be formed into an inflatable balloon comprising
the sleeve having a first end, a second end, and a middle section;
wherein prior to being formed into the balloon by mounting on the
catheter shaft at least one of the ends is non-distensible while the middle section of the sleeve is distensible.

With this current amendment, the present invention is clearly defined over all of the cited references.

Claim 24 (previously amended) was previously rejected on the basis of US Patent 5,919,163 to Glickman ("Glickman patent") for the proposition that his balloon could be slid off the catheter shaft in order to meet the claimed construction of the present invention. It is now acknowledged by the Office that Glickman's balloon cannot be manipulated in that manner. Office Action of September 8, 2003, at 4. The rejection based on Glickman patent has accordingly been withdrawn.

In the current Office Action the Daneshvar patent is applied in a similar manner as the Glickman patent. In particular, it is asserted that "Daneshvar teaches a balloon that is slidable along a catheter (col. 3, lines 21-25). Daneshvar further teaches that the balloon does not leak between itself and the catheter that it is mounted on (col. 9, lines 40-45)" Office Action of September 8, 2003, at 2. This is not a fair application of the Daneshvar patent against the present invention as claimed.

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The Daneshvar patent does teach that its balloon (or "resistance unit") can be formed to slide along the catheter shaft (or "body") of its device. However, the balloon so formed is not a balloon sleeve with non-distensible ends, but, rather, a completed balloon device that can be moved along the catheter shaft after the completed balloon has been formed. In particular, Daneshvar teaches:

Importantly, the balloon or the resistance of these unit [sic] may be made to slide on the catheter and to be placed on a proper area of the catheter prior to use. In this model, the balloon will have tubing in its center that allows the balloon to be created and to move along the length of the catheter.

Daneshvar patent, at Col. 16, lines 44-49 (emphasis added). Thus, in order to allow the balloon to move along the length of his catheter shaft, Daneshvar must provide internal tubing around which the exterior of the balloon is formed. Accordingly, any non-distensible ends that may be formed in this process will be formed only after the sealed balloon is formed in conjunction with the center tubing. Nothing in the Daneshvar patent in any way teaches or suggests forming a balloon sleeve that has non-distensible ends prior to being sealed into a final balloon construct. Fairly read in light of this teaching, the Daneshvar patent simply does not meet the claimed limitations of the present invention.

The Kraus et al. patent is also cited for the proposition that it "...teaches all the claimed subject matter including the balloon being attached to a non-distensible member (inner tube 21) to render the ends non-distensible" However, just like the Daneshvar patent, Kraus et al. form a balloon over an internal tube before they render either end of the external balloon sleeve non-distensible. Specifically, Kraus et al. teach "The sheath 22 of the balloon is sealed around both ends of the internal tubular member 21 to form an inflatable cavity 23 which encircles the tubular member." Col. 3, lines 51-53 (emphasis added). Kraus et al. do not teach rendered the ends of their balloon sleeve non-distensible prior to forming the balloon itself.

With respect to both the Daneshvar and Kraus et al. patents, the center "tubing" and "internal tubular member" are essentially short catheter shafts around which the catheter balloons are formed. Just as is required with full-length catheters in conventional statically mounted balloons, these internal tube structures are necessary to convert the external sleeve material into a sealed balloon structure.

Claim 24 has been amended to better define the present invention over these references. As currently amended, it should now be very clear that at least one of the ends of the distensible balloon sleeve of the present invention is rendered non-distensible "...prior to being formed into the balloon...." None of the references of record in any way teaches or suggests a balloon sleeve of this nature, much less the more specific structures defined by dependent claims 25, 26, 29, 32-34, 37, and 40-42.

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With respect to the dependent claims rejected as obvious over Daneshvar patent combined with either the Crocker et al. or Ravenscroft et al. patents, these additional patents do not correct the deficiencies already discussed with respect to the Daneshvar patent.

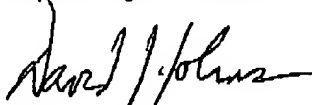
As was previously explained, the Crocker et al. patent is directed at providing "expansion-limiting bands" along the length of an expandable balloon to create a balloon that has different "zones" of expansion along its length. The Crocker et al. patent neither teaches nor suggests that a balloon material should be rendered completely non-distensible at its ends prior to mounting on a catheter shaft. Combining the Daneshvar and Crocker et al. patents neither teaches nor suggests the present invention as claimed.

Likewise, the Ravenscroft et al. patent teaches wrapping a catheter shaft with an elastomeric (distensible) tape that is then wrapped around a non-distensible balloon material. Again, this patent does not teach or suggest that a balloon material should be rendered completely non-distensible at its ends prior to mounting on a catheter shaft. It does not correct the deficiencies of the Daneshvar patent with respect to the present invention as claimed.

CONCLUSION

For the foregoing reasons, each of the claims of the present application is both new and non-obvious over all of the references of record. Reconsideration and allowance of the claims are accordingly respectfully requested. If any questions remain, applicants request a further interview prior to the next Office Action.

Respectfully submitted,



David J. Johns
Reg. No. 31,527
W. L. Gore & Associates, Inc.
551 Paper Mill Road, P.O. Box 9206
Newark, DE 19714-9206
(928) 864-4800

Date: _____

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